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156. Staple `Grains' in the Western Deccan
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increased (5–10 per cent.). There were 10 per cent. normoblasts and occasional large spherocytes. There were no inclusion bodies. Fragility test showed an increased resistance of the red cells. There was an increase in the indirect reacting bilirubin. Sickling test was negative. The fœtal hæmoglobin was 17 per cent. Serum iron was 184 gamma per cent. with 73 per cent. saturation.

Fig. 2 shows the hæmoglobin pattern revealed by starch gel electrophoresis. The patient's hæmoglobin separates in two bands, one running in the region of *A* and *F* and one running behind standard *S* Hæmoglobin and interpreted to be Hæmoglobin *E* (we are indebted to Dr. H. Lehmann (London) and Dr. P. Fessas (Athens) for confirming the nature of the hæmoglobin in this case). The mother's blood showed two bands, Hæmoglobin *A* and *E*, while the father and brother showed only Hæmoglobin *A*.

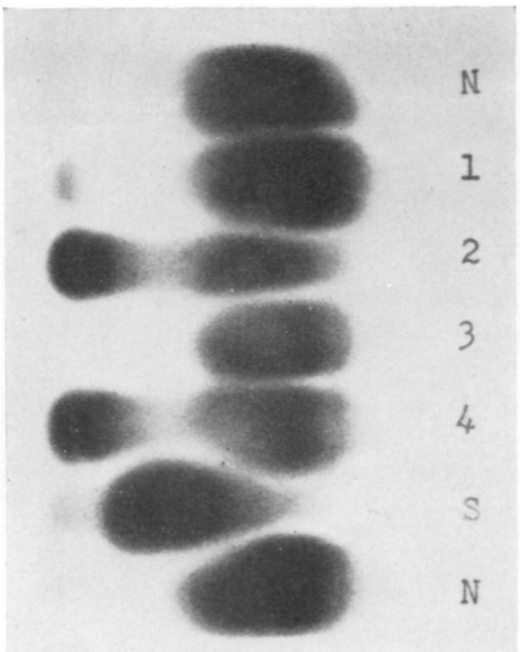

FIG. 2. ELECTROPHORETIC PATTERN OF PATIENT AND FAMILY

N = *Normal* 3 = *Brother*
1 = *Father* 4 = *Mother*
2 = *Patient* S = *Control sickle*

Discussion and Conclusion

The Hæmoglobin *E* gene is encountered most frequently in the countries of South-East Asia. The highest incidence is reported from Thailand (Chernoff, Minnich *et al.*, 1956), Burma (Lehmann, Storey and Thein, 1956) and Malaya (Lehmann and Singh, 1956). The gene occurs less frequently among the Indonesians (Lie-Injo Luan Eng, 1959) and the Bengalis (Chatterjea *et al.*, 1957). It has also been reported to occur in the Vedda population of Ceylon (De Silva *et al.*, 1959). In the Middle East, cases have been reported from Turkey (Aksoy, Bird, Lehmann *et al.*, 1955) and Egypt (Hoerman, Kamel and Awny, 1961). Our patient originates from the Persian Gulf area. From all these areas, Hæmoglobin *E* Trait, Homozygous *E* disease and thalassæmia-*E* combination have been reported.

The clinical picture in thalassæmia and in thalassæmia *E* disease is very similar. Both present, with microcytic hypochromic anæmia, anisopoikilocytosis, basophilic stippling and target cells. The presence of many normoblasts and spherocytes is unusual in thalassæmia, but does occur. The *E* gene tends to make the manifestations of thalassæmia milder, and a higher percentage of patients with thalassæmia *E* disease is seen in older people. The presence of the *E* gene should be suspected and looked for in all cases of atypical thalassæmia. The only differentiating point is the electrophoretic pattern of the hæmoglobins. In our patient the presence of Hæmoglobin *A* is accounted for by the transfusions which he received before the studies were done. However, small amounts of *A* hæmoglobin may remain undetected in the presence of a major Hæmoglobin *F* component.

This is the first report of thalassæmia *E* disease from the Persian Gulf area and the Arabian peninsula. The *E* gene may be common in that area, having been transplanted from South-East Asia by pilgrims or merchants, and the presence of this focus of the gene may be the link between South-East Asia and the foci reported from Turkey and Greece.

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Staple 'Grains' in the Western Deccan.* *By Professor D. D. Kosambi, Poona, India*

156 The oldest surviving text (V–III century B.C.) of the Pali Buddhist canon reports an argument between two ascetics (*Sutta-Nipata* 239–252, the *Ama-gandha-sutta*). The more austere censures the other for living as an almsman, begging food cooked by others, when it would be more righteous to subsist by pure (vegetarian) food-gathering in the wilderness. That the earliest Indian monks represent an attempted reversion to food-gathering is beyond any doubt. Two of the three wild products (*Panicum frumentaceum* and *Phaseolus mungo*) named in the opening stanza are now regularly cultivated. Both products appear in the extraordinary range of 'cereals' (*dhanya*) and 'subsidiary cereals' (*upadhanya*) eaten by the Marathi-speaking peasant. Though the Deccan plateau is not so rich in vegetation as other parts of India, it will be seen that the 44 varieties reported run through the entire spectrum from agriculture to food-gathering, as far as storage grains are concerned. There are proverbially supposed to be 18 varieties in each group, but the number in the latter class exceeds 18 and sometimes overlaps the former—a natural concomitant of variation in food-gathering for different localities. Important cultivated supplements to the diet, such as onions and potatoes, do not appear in either list;

* *In the interests of economy the diacritical marks on vernacular words have been omitted.*—ED.

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maize is a comparatively recent foreign import not yet popular enough to appear in the major cultivated group.

Dhanya: (1) Wheat. (2) Rice. (3) *Cytisus cajan* (*tura*, a pulse). (4) Barley (*java*). (5) *Holcus sorghum* (*jondhala*). (6) Pea (*vatana*), here to be used dried; of course, it is eaten fresh and green as a vegetable as well, in curries and with rice. (7) *Lithyrus sativus* (*lamka*). (8) *Cicer arietinum*, the gram known as *cana*. (9) Linseed (*javasa*). (10) Lentil (*masura*); again, mostly used to supplement rice, or *bajari*, like most other legumes. (11) *Phaseolus mungo* (*muga*; there is sometimes confusion between this and *P. radiatus*). (12) *Panicum italicum* (*rala*). (13) Sesamum (*tila*; the most important source of food oil). (14) *Paspalum frumentaceum* (*harika*, or *kodru*; virtually a weed in rice plots, semi-wild). (15) *Glycine tomentosa*, the vetch called *kulitha*. (16) *Panicum frumentaceum* (*sava*). (17) *Phaseolus radiatus* (*udida*). (18) The bean *Dolichos catjang* (*cavali*) or *D. sesquipedalis*.

Among the *upadhanya*, semi-wild and less regularly cultivated, come: (19) *Holcus spicatus* (*bajari*, or *sajagura*; there is some confusion here about the latter). (20) *Panicum picosum* (*bhadali*). (21) *Coix barbata* (*vari*). (22) *Eleusine coracana* (*nacani*). This, like the preceding, is staple food in the backlands. It can be planted by digging stick, without the plough, as can most of the *upadhanya* list. Slash-and-burn (swidden) methods are generally used when it is planted in forest areas, but *vari* is an upland grain, while *nacani* is cultivated where the rainfall is better. (23) *Baraga*; the millet *Panicum miliaceum*. (24) *Khapale-gahu*, a variety of wheat with indurated glumes that have to be pounded off. Here, it should be noticed that *Phaseolus mungo*, *Phaseolus radiatus* and *Panicum picosum* also occur in some *upadhanya* lists. (25) Maize (*maka*). (26) Safflower (*karadai*; an important source of edible oil). (27) *Amaranthus pendulus* (*rajagira*). (28) *Phaseolus aconitifolius* (*mataki*; with *hulaga* below, this counts as the lowest element of peasant diet in times not actually those of famine). (29) *vala* (*Dolichos spicatus*, but the name seems to be used for several similar beans). (30) Wild rice to be had without cultivation from a few swampy areas around the margin of ponds. This has the special name *deva-bhata*, 'rice of the gods.' (31) *Hordeum hexastichum* (*satu*). (32) *Hibiscus cannabinum*, the frog-plum *ambadi*. (33) The edible mustard *siras*. (34) Cumin seed (*jira*). (35) *Trigonella fœnugræcum* (*methi*). (36) Bamboo seed. (37) Lotus seed. (38) The rice-weed *Clypea burmanni* (*pakada*). (39) The dried seeds of *Hibiscus esculentus* (*bhendi*) which is also eaten as a fresh vegetable. (40) *Dolichos fabæformis* (*govari*, oftener eaten fresh as a vegetable). (41) Seeds of *Echites antidysenterica* (*kudyace bija*) rarely eaten as food except in case of great need, but often used for stomach trouble. (42) *Dolichos biflorus* (*hulaga*); this is the favourite low-grade staple on the Deccan plateau section of Maharashtra. (43) Poppy seed (*khaskhas*). (44) White *rala*, a rare variety of (12) above; probably used for fast days, when the major staples are banned.

This list does not take into account the vegetables that grow wild or semi-wild. These grains are often used in rotation of crops. For example, the leguminous additions are generally planted in seed beds of paddy rice after the seedlings have been transplanted; thus, they renew the soil. For hillside slash-and-burn, the method is to plant *nacani* for one or at most two consecutive years; then *sava or rala* the next year and then fallow for eight years to allow the scrub to grow again. The immense variety, the obvious transition from food-gathering to cultivation and the method whereby meat-eating is almost entirely avoided by a balanced diet are significant. In the better-forested regions, many of these minor staples can be gathered wild. The list of edible forest products normally known to the local inhabitants goes to nearly 200 for the Konkan forests. This includes fruit, berries, leaves and mushrooms, but not wild game, honey and the like, nor the coconut upon which the entire west-coast economy depends. The most primitive of forest dwellers eat snakes, lizards, mice, monkeys and some insects as well, whenever available. Fish is no longer plentiful, except on the western coast; even there, rather costly except at certain seasons, when it is dried and salted. River fish was a most important part of the diet in the Deccan stone-age days, so that the continuity or lack of continuity depends to a great extent upon ecological changes brought about by man. Deforestation has caused rivers to be silted up and the water to vary rapidly from flood to drought in the streams, hence the poor fishing.

It would be rather difficult to trace the historical development of these food grains and their geographical spread, but this note may provide a basis for future investigation. We should have been in a better position had the Greek observers who came to India with Alexander reported in greater detail upon the diet of the *hylobioi*.

CORRESPONDENCE

Bibliographies of Australia and New Guinea. *Cf.* MAN, 1963, 46

157 SIR,—I endorse Dr. Needham's plea for a comprehensive bibliography on Aboriginal Australian societies and am happy to report that work has begun on this under the auspices of the Interim Council of the Australian Institute of Aboriginal Studies. A list of current publications on Aboriginal studies was published in the first Newsletter issued recently by the Institute. It is intended that similar lists shall form part of future Newsletters. Publication of bibliographies on selected topics will begin when the necessary information has been collected.

Readers may also like to know that in the Department of Anthropology and Sociology, Australian National University, the preparation of a classified bibliography of the peoples of New Guinea has been in progress for the last three years. Information is stored on cards available for use in Canberra. It is hoped to publish the first section of this bibliography in mimeographed form by the end of this year.

Australian National University, Canberra J. A. BARNES

Correction. *Cf.* MAN, 1963, 112

158 The Hon. Editor of MAN much regrets that, by a printer's error which unfortunately remained undetected in proof, the date of Mrs. Seligman's birthday was given as 26 (instead of 28) June, although the correct date was implied in the later reference to the presentation (which, by a change in the arrangements, in fact took place at the Annual General Meeting).

REVIEWS

GENERAL

Marriage in Tribal Societies. *Edited by Meyer Fortes. Cambridge Pps. in Soc. Anthrop., No. 3. London (C.U.P.), 1962. Pp. vii, 157. Price £1 5s.*

159 This is a most welcome third volume of the Cambridge Papers in Social Anthropology. The book (now in hard covers) contains four essays and an Introduction by Professor Fortes. The first essay, 'Conjugal Separation and Divorce among the Gonja of Northern Ghana,' by Dr. Esther Goody, elucidates the importance of analysing the *pattern* of divorce as well as its frequency. Dr. Goody's valuable contribution also emphasizes the point (sometimes overlooked in discussions of marriage stability) that a relatively high frequency of divorce may be normal in some societies.

In the second essay Dr. Grace Harris presents a cogent analysis

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